



COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

L. Preston Bryant, Jr.
Secretary of Natural Resources

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David K. Paylor
Director

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STATE WATER CONTROL BOARD ENFORCEMENT ACTION

AMENDMENT TO SPECIAL ORDER BY CONSENT

ISSUED TO THE

STAFFORD COUNTY BOARD OF SUPERVISORS

FOR THE

AQUIA ADVANCED WASTEWATER TREATMENT FACILITY (VPDES PERMIT NO. VA0060968)

SECTION A: Purpose

This is an Amendment to a Consent Special Order issued under the authority of Va. Code §§ 62.1-44.15(8a) and (8d) and 10.1-1185 by the State Water Control Board to the Stafford County Board of Supervisors ("County") on April 1, 2002 ("2002 Order"), regarding the Aquia Advanced Wastewater Treatment Facility ("WWTF"), for the purpose of revising certain provisions of that Consent Special Order.

SECTION B: Basis for Amendment

1. The County owns and operates the WWTF that treats wastewater and sewage from the commercial, domestic, and light industrial sources within Stafford County. In relevant part, the 2002 Order required an upgrade to the WWTF which included the installation of a second sludge dewatering centrifuge and a new treatment train. On December 12, 2005, DEQ executed a Consent Special Order Amendment ("2005 Amended Order") that required the County to develop a plan to address the new *E. coli* permit limit. The 2005 Amended Order established interim limits for Fecal Coliform in lieu of the *E. coli* limits and required the County to upgrade the WWTF to meet the *E. coli* limits.

2. The County proposed to replace its Trojan Ultra-Violet (UV) 2000 system with the advanced 3000 Plus system that has mechanical cleaning capabilities for removing coatings on the system's quartz tubes. The County asserts that the UV tubes are being coated by the presence of elevated levels of iron in the WWTF influent which is believed to be coming from the solids discharge of the Smith Lake Water Treatment Facility. The coatings impact the transmittance of UV light and reduce the level of disinfection achieved. Therefore, the self-cleaning system is needed to ensure proper disinfection and consistent compliance with the new *E.coli* permit limits.
3. Pursuant to the 2005 Amended Order, the County submitted the Preliminary Engineering Report (PER) for installation of the upgraded UV system to DEQ on November 14, 2005. However, the PER was not approved by DEQ until July 19, 2006 because of DEQ's limited resources for plan review. Plans and specifications for the UV system were received by DEQ on September 25, 2006 and are currently being reviewed.
4. Concurrently while the PER was under review an unanticipated toxic event severely impaired the treatment efficiency at the WWTF during the Spring of 2006. Specifically, on March 9, 2006, County staff observed an orange-colored substance in the WWTF influent flow. This event resulted in a significant loss of microorganisms and resulted in numerous Permit effluent violations over a three month period.
5. The Board has evidence to indicate that the County has violated the Virginia Pollutant Discharge Elimination System Permit Regulation (9 VAC 25-31-10 *et seq.*) and the Permit by exceeding Permit effluent limits for Total Phosphorus, Ammonia as N, Carbonaceous Biochemical Oxygen Demand, Total Suspended Solids, and Fecal Coliform. DEQ NVRO issued four notices of violation (NOV) to the County for the above-referenced violations as follows: NOV No. W2006-04-N-1010 issued April 7, 2006; NOV No. W2006-05-N-0006 issued May 11, 2006; NOV No. W2006-06-N-0006 issued June 7, 2006; and NOV No. W2006-07-N-0008 issued July 11, 2006.
6. In an effort to address the toxic event the County: (1) analyzed several samples from its sewage collection system including the pump station that serves the U.S. Marine Corps Base Quantico; (2) had its consulting engineers review lab data and make process control recommendations; (3) pumped out the solids from the WWTF's clarifier and anoxic zone; (4) reseeded the WWTF with healthy microorganisms from the County's Little Falls Run Wastewater Treatment Facility; and (5) installed a temporary chlorination/dechlorination system to improve disinfection performance. During this period DEQ NVRO and DEQ Operators Assistance Program staff also visited the WWTF but were unable to recommend any additional actions the County should take to return to compliance.

7. Although it took three months for the plant to slowly recover from the toxic event, the County returned to, and has remained in compliance since June 2006 except for minor violations of Total Phosphorus. However, the County's investigative efforts have not led to the identification of the specific source of the toxicity.
8. Appendix A of this Amendment requires the County to: (1) complete installation of the upgraded UV system; (2) submit a collection system map; (3) submit an updated Operations & Maintenance (O&M) Manual to address septage receiving and handling; and (4) submit a collection system/WWTF action plan to address future unanticipated toxic events.

SECTION C: Agreement and Order


Accordingly the Board, by virtue of the authority granted it in Va. Code §§ 62.1-44.15(8a and 8d) and 10.1-1185, orders the County, and the County voluntarily agrees that it shall:

1. Perform the actions described in Appendix A to this Amendment and comply with the interim limits described in Appendix B to this Amendment. Appendix A and Appendix B to this Amendment supersede the corresponding appendices of the 2005 Amended Order which superseded the corresponding appendices of the 2002 Order. Both the State Water Control Board and the County understand and agree that this Amendment does not alter, modify, or amend any other provision of the 2005 Amended Order and 2002 Order and that unmodified provisions remain in effect by their own terms.
2. Pay a civil charge of \$7,200 within 30 days of the effective date of the Amendment in settlement of the violations cited in this Amendment. Payment shall be made by check payable to the "Treasurer of Virginia", delivered to:

Receipts Control
Department of Environmental Quality
Post Office Box 1104
Richmond, Virginia 23218

Either in the transmittal letter or as a notation on the check, the County shall indicate that this payment is submitted pursuant to this Consent Order Amendment and shall include the Federal Identification Number for the County.

And it is so ORDERED this day of June 29, 2007


Jeffery A. Steers, Regional Director
Department of Environmental Quality
Northern Virginia Regional Office

Stafford County Board of Supervisors voluntarily agrees to the issuance of this Order.

By: Steve Crosby
Steve Crosby
County Administrator
Stafford County

Date: 2/2/07

Commonwealth of Virginia
City/County of Stafford

The foregoing document was signed and acknowledged before me this 7th day of February, 2007, by Steve Crosby, County Administrator, on behalf of the Stafford County Board of Supervisors.

Eleanor Huzman
Notary Public

My commission expires: 10/31/2010

APPENDIX A SCHEDULE OF COMPLIANCE

The Stafford County Board of Supervisors shall:

1. Within one-hundred eighty (180) days of approval of the plans and specifications by DEQ, complete installation and request a Certificate to Operate (CTO) the upgraded UV system.
2. Within sixty (60) days of the effective date of this Order, submit to DEQ a sewage collection system map that includes: all pump station locations, both County- and privately-owned; the locations of all industrial users, and; the locations of identified first response sample collection points.
3. Within ninety (90) days of the effective date of this Order, update and submit to DEQ a revised O&M Manual that addresses septage receiving and handling at the WWTF. The update must examine whether septage can be routed through the WWTF without overburdening the WWTF treatment processes.
4. Within one-hundred twenty (120) days of the effective date of this Order, submit to DEQ a collection system/ WWTF action plan for monitoring of toxic discharge activities in the sewage collection system and WWTF. At a minimum, the sewage collection system portion of the plan shall include: (1) locations of first response sample collection points; (2) the frequency of collection and parameters of interest; and (3) the triggers for unscheduled sample collection. At a minimum, the WWTF portion of the plan shall include the triggers at the WWTF that would indicate a toxic load had entered the WWTF, especially with respect to sample collection and testing of raw influent. Upon approval by DEQ, the action plan including the proposed schedules of implementation shall become a part of and enforceable under the terms of this Order.

APPENDIX B

INTERIM EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

During the period beginning with the effective date of this Order and lasting until the installation of the new UV system is complete and a CTO is issued, the County shall monitor and limit the discharge from outfall 001 at the WWTF in accordance with VPDES Permit No. VA0060698, except as specified below. These interim limits shall retroactively apply, if applicable, as of the first day of the month in which this Order becomes effective. These requirements shall be construed in light of the Board's Permit Regulation.

PARAMETER	DISCHARGE LIMITATIONS			MONITORING REQUIREMENTS	
	<u>Monthly Average</u>	<u>Weekly Average</u>	<u>Minimum</u>	<u>Frequency</u>	<u>Sample Type</u>
Total Residual Chlorine (TRC)	0.008 mg/L	0.016 mg/L	N/A	1/D	Grab

N/A = Not Applicable

NL = No Limit

1/D = Once a day

Grab = An individual sample collected in less than fifteen minutes

Quantification Levels and Reporting

- a. Maximum quantification levels (QLs) for TRC shall be:

TRC	0.10 mg/L
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- b. The County may use any approved method that has a QL equal to or lower than 0.10 mg/L. The QL is defined as the lowest concentration used to calibrate a measurement system in accordance with the procedures published for the method.
- c. It is the responsibility of the County to ensure that proper quality assurance/quality control (QA/QC) protocols are followed during the sampling and analytical procedures. QA/QC information shall be documented to confirm that appropriate analytical procedures have been used and the required QL have been attained.

- d. Compliance with the monthly average limitations and/or reporting requirements for TRC shall be determined as follows: All concentration data below 0.10mg/L shall be treated as zero. All concentration data equal to or above 0.10 mg/L shall be treated as it is reported. An arithmetic average shall be calculated using all reported data, including the defined zeros, for the month. This arithmetic average shall be reported on the DMR as calculated. If all data are below 0.10 mg/L then the average shall be reported as <QL. If reporting for quantity is required on the DMR and the calculated concentration is <QL, then report <QL for the quantity. Otherwise, use the calculated concentration to determine the monthly average quantity.
- e. Any single datum required shall be reported as <QL if it is less than 0.10 mg/L. Otherwise, the numerical value shall be reported.